PALOMAR ENERGY PROJECT (01-AFC-24)
CEC STAFF DATA REQUEST NUMBER 3

Technical Area: Air Quality **Response Date: April 8, 2002**

REQUEST:

Please identify why this project, as opposed to other proposed and certified projects, cannot meet an ammonia slip level of 5 ppm at 15 percent O2. In this discussion, please identify measures, including increasing catalyst surface area and/or purchasing mitigation, that might allow the project to meet the guideline level for ammonia and identify the associated costs of such measures.

RESPONSE:

Palomar proposes to install a state-of-the-art SCR system designed to achieve NO_x emissions of 2.0 ppmvd at 15% O_2. Upon initial startup of the facility, Palomar expects the ammonia slip to be extremely low. On a long-term basis, the 10 ppmvd at 15% O_2 NH_3 emission limitation will only be approached as the catalyst ages. The 10 ppmvd at 15% O_2 ammonia slip limitation is intended to serve two purposes. First, as Palomar is proposing a NO_x emission limit that is lower than any demonstrated combustion turbine facility, a higher NH_3 emission limitation will provide the facility with greater ability to comply with the NO_x emission limit. Second, no existing facilities have attempted to operate at these very low NH_3 emission levels. Third the 10 ppmvd at 15% O_2 NH_3 emission limitation will provide Palomar with a longer catalyst life, while maintaining low NO_x emissions, and allow the facility greater flexibility when scheduling catalyst replacement. It is unknown what the actual frequency of catalyst replacement will be, and hence is difficult to estimate the costs. There also would be greater costs associated with maintenance of the system; these costs are impossible to estimate until there is some operating history.

Although ammonia is a toxic air contaminant, dispersion modeling shows that even with a NH_3 emission limit of 10 ppmvd at 15% O_2, the maximum health risk resulting from the proposed project will be very low.
